

WHAT IS CLAIMED IS:

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1. A pharmaceutical composition in a closed container, said composition comprising a meiosis activation substance having a low oxygen content, and wherein said closed container is capable of maintaining the low content of oxygen.

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2. The pharmaceutical composition in a closed container according to claim 1, wherein the low oxygen content is below about 0.01 moles oxygen per liter of the volume of the container.

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3. The pharmaceutical composition in a closed container according to claim 1, wherein the low oxygen content is below about 0.001 moles of oxygen per liter of the volume of the container.

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4. The pharmaceutical composition in a closed container according to claim 1, wherein the low oxygen content is below about 0.0001 moles of oxygen per liter of the volume of the container.

5. A pharmaceutical composition in a closed container comprising:

(i) a solid composition of a meiosis activation substance,

25 (ii) an additive,

(iii) an atmosphere with a low oxygen content, and

wherein the closed container is capable of maintaining the low content of oxygen.

6. The pharmaceutical composition in a closed container according to claim 5, wherein
30 the solid composition of a meiosis activation substance has a high aqueous solubility.

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7. The pharmaceutical composition in a closed container according to claim 5, wherein the oxygen content of the atmosphere is below 10%.

8. The pharmaceutical composition in a closed container according to claim 5, wherein
5 the oxygen content of the atmosphere is below 5%.

9. The pharmaceutical composition in a closed container according to claim 5, wherein the oxygen content of the atmosphere is below 1%.

10 10. The pharmaceutical composition in a closed container according to claim 5, wherein the atmosphere contains over 90% nitrogen or argon.

11. The pharmaceutical composition in a closed container according to claim 5, wherein the atmosphere contains over 99% nitrogen or argon.

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12. The pharmaceutical composition in a closed container according to claim 5, wherein the solid composition has a water content below about 10%.

13. The pharmaceutical composition in a closed container according to claim 5, wherein
20 the solid composition has a water content below about 5%.

14. The pharmaceutical composition in a closed container according to claim 5, wherein the solid composition has a water content below about 1%.

25 15. The pharmaceutical composition in a closed container according to claim 5, wherein the solid composition has an organic solvent content below about 10%.

16. The pharmaceutical composition in a closed container according to claim 5, wherein the solid composition has an organic solvent content below about 5%.

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17. The pharmaceutical composition in a closed container according to claim 5, wherein the solid composition has an organic solvent content below about 1%.

5 18. The pharmaceutical composition in a closed container according to claim 5, wherein the meiosis activation substance content is below about 10% by weight.

19. The pharmaceutical composition in a closed container according to claim 5, wherein the meiosis activation substance content is below about 2% by weight.

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20. The pharmaceutical composition in a closed container according to claim 5, wherein the meiosis activation substance content is below about 1% by weight.

21. The pharmaceutical composition in a closed container according to claim 1, wherein
15 the meiosis activation substance is a compound exhibiting a percentage germinal vesicle breakdown which is 50% higher than a control.

22. The pharmaceutical compositions in a closed container according to claim 1,
wherein the meiosis activation substance is selected from 4,4-dimethyl-5 α -cholesta-8,14,24-
20 triene-3 β -ol; 4,4-dimethyl-5 α -cholest-8,14,24-trien-3 β -ol hemisuccinate; 5 α -cholest-8,14-
dien-3 β -ol; 5 α -cholest-8,14-dien-3 β -ol hemisuccinate; (20S)-cholest-5-en-3 β ,20-diol; 3 β -
hydroxy-4,4-dimethyl-5 α -chola-8,14-dien-24-oic acid-N-(methionine) amide; cholest-5-en-
16 β -ol; and (20S)-20-[(piperidin-1-yl)methyl]-4,4-dimethyl-5 α -pregna-8,14-dien-3 β -ol.

23. The pharmaceutical composition in a closed contained according to claim 5, wherein
25 the additive is a protein or a phosphorglyceride.

24. The pharmaceutical composition in a closed container according to claim 23,
wherein the protein is serum albumin.

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25. The pharmaceutical composition in a closed container according to claim 24, wherein the serum albumin is human serum albumin or recombinant form human serum albumin.

5 26. The pharmaceutical composition in a closed container according to claim 5, wherein the additive content is above about 90%.

27. The pharmaceutical composition in a closed container according to claim 5, wherein the additive content is above about 98%.

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28. The pharmaceutical composition in a closed container according to claim 5, wherein the additive content is above about 99%.

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29. The pharmaceutical composition in a closed container according to claim 5, said container having one or more hollow spaces and wherein at least one hollow spaces contains

- (i) the solid composition of a meiosis activation substance with a high aqueous solubility,
- (ii) the additive, and
- (iii) the atmosphere with a low oxygen content.

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30. The pharmaceutical composition in a closed container according to claim 5, wherein an aqueous media is added to the solid composition to form an aqueous solution.

25 31. The pharmaceutical composition in a closed container according to claim 30, wherein the meiosis activation substance in the aqueous solution is in a concentration above about 100 µg/ml.

30 32. The pharmaceutical composition in a closed container according to claim 30, wherein the meiosis activation substance in the aqueous solution is in a concentration above about 10 µg/ml.

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33. The pharmaceutical composition in a closed container according to claim 30, wherein the meiosis activation substance in the aqueous solution is in a concentration above about 1 µg/ml.

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34. The pharmaceutical composition in a closed container according to claim 30, wherein the meiosis activation substance in the aqueous solution is in a concentration above about 0.001 µg/ml.

10 35. The pharmaceutical composition in a closed container according to claim 30, wherein the aqueous media has an organic solvent content of less than about 0.1%.

36. The pharmaceutical composition in a closed container according to claim 30, wherein the aqueous media has an organic solvent content of less than about 0.05%.

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37. A process for preparing a pharmaceutical composition in a closed container, comprising

- a) preparing a solid composition comprising a meiosis activation substance and an additive;
- b) adding the solid composition to the container;

20 c) freeze drying the composition; and
d) closing the container *in vacuo*.

38. The process according to claim 37, wherein the preparation of the solid composition is performed *in vacuo*.

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39. The process according to claim 37, wherein the preparation of the solid composition is in an atmosphere having a low content of oxygen.

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40. A process for preparing a pharmaceutical composition in a closed container, said process comprising:

- a) preparing a solid composition comprising a meiosis activation substance and an additive;
- b) filling the solid composition into the container;
- 5 c) filling the container with an atmosphere having a low content of oxygen; and
- d) closing the container.

41. The process according to claim 40, wherein the solid composition is prepared in an atmosphere having a low content of oxygen.

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42. A process for increasing the stability of a pharmaceutical composition in a closed container comprising:

- a) preparing a solid composition comprising a meiosis activation substance having a low content of oxygen and an additive;
- 15 b) filling the solid composition into the container;
- c) filling the container with an atmosphere having a low content of oxygen; and
- d) closing the container.

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